Inspection Report For Well: UT20736 - 04475

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/10/2013

Others: Ajayi, Christopher — Time: 1:06 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 29-16		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SESE S29 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1780 /
Last MIT:	Pass 9/9/2010	***Annulus Pressure From Last MIT:***	1020

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)

- ☐ Construction / Workover
- ☐ Plugging
- ☐ Post-Closure
- ☐ Response to Complaint
- ☒ Routine
- ☐ Witness MIT
- ☐ Other

ICIS Entered
Date 12/27/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure: U: 137 L: ____ psig	Gauge Range: Scada psig	Gauge Owner:	☐ EPA ☒ Operator
Annulus Gauge:	☒ Yes ☐ No	Pressure: 0 psig	Gauge Range: opened psig	Gauge Owner:	☒ EPA ☐ Operator
Bradenhead Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator
Pump Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator

Operating Status: (Select One)
☐ Active ☒ Not Injecting ☐ Plugged and Abandoned
☐ Being Reworked ☐ Production ☐ Under Construction

TAB | GREEN | BLUE | CBL
1

See page 2 for photos, comments, and site conditions.

U2 Entered
Date 12/17/13
Initial

Inspection Report For Well: UT20736 - 04475 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

SEP 20 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Authorization to Continue Injection**
Ute Tribal #29-16
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04475
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting to the Region VIII Ground Water Program office of the Environmental Protection Agency (EPA) the results from the June 21, 2001, radioactive tracer survey (RATS) used to demonstrate Part II (External) Mechanical Integrity (MI) test on the Ute Tribal #29-16 injection well. In the letter accompanying the RATS results, you requested an extension on the time allowed to inject in order to allow for continued stabilization of pressure, and indicated your willingness to run RATS at set intervals until a maximum injection pressure of 2217 psig could be obtained, tested and approved. A limited injection period of up to one hundred and eighty days, beginning January 24, 2001, was authorized to allow for stabilization of the injection formation pressure prior to the demonstration of Part II (External) MI.

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the **tested pressure of 1780 psi.** Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #29-16 under the terms and conditions of EPA Area Permit UT2736-00000 and the

Authorization currently for Additional Well UT2736-04475, issued under this Area Permit. The authorized maximum allowable injection pressure (MAIP) for this well is changed to 1780 psig.

Please note that the maximum pressure of 1780 psi used during the RATS MI demonstration becomes the maximum allowable injection pressure for the well. However, you may apply for a higher maximum allowable injection pressure at a later date after the formation pressure has further stabilized. Your application should be accompanied by the interpreted results from a step rate test that measure the formation fracture pressure and fracture gradient at this location. A copy of EPA guidelines for running and interpreting a step rate test are included with this letter. Should the step rate test result in approval of a higher MAIP, a new Part II (External) MI demonstration must be run to show that injected fluids will remain in the authorized injection interval at the higher pressure.

If you have any questions in regard to the above action, please contact Chuck Tinsley at 303.312.6266 or Dan Jackson at 303.312.6155. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Council
Ute Indian Tribe

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, 8ENF-T
USEPA

OMB No. 2040-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency
Washington, DC 20460

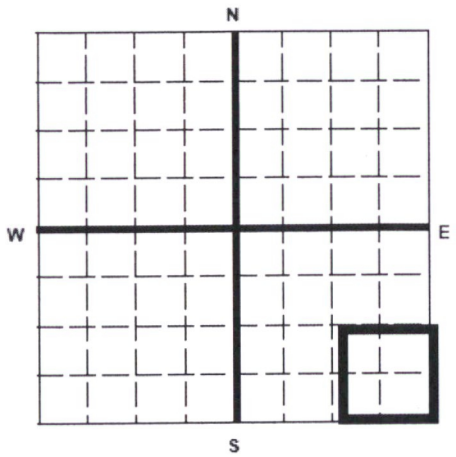
EPA

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04475

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 500 ft. frm (N/S) S Line of quarter section
and 500 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-16

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1698	1721	135		0	0
February	16	1710	1722	228		0	0
March	16	1712	1715	250		0	0
April	16	1726	1744	183		0	0
May	16	1707	1750	129		0	0
June	16	1683	1706	32		0	0
July	16	1714	1727	197		0	0
August	16	1705	1724	220		0	0
September	16	1725	1736	249		0	0
October	16	1726	1751	190		0	0
November	16	1683	1713	112		0	0
December	16	1735	1747	294		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor	02 Entered	03/21/2017

EPA Form 7520-11 (Rev. 12-11)

GREEN BLUE CBI TAB 2

Date 4/6/17
Initial DB

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH**	Sales Rep:	**James Patry**
Well Name:	**Ute Tribal 29-16 Injection**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Wellhead**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-346733**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/25/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	450
Calculated Density (g/ml):	1.0032
pH:	9.10
Calculated TDS (mg/L):	8551.76
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2778.07	Chloride (Cl):	3000.00
Potassium (K):	18.52	Sulfate (SO_4):	30.00
Magnesium (Mg):	14.73	Bicarbonate (HCO_3):	2562.00
Calcium (Ca):	31.58	Carbonate (CO_3):	
Strontium (Sr):	4.05	Hydroxide(HO):	
Barium (Ba):	11.24	Acetic Acid (CH_3COO)	
Iron (Fe):	70.42	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	11.18	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.16	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.26	Bromine (Br):	
Aluminum (Al):	0.07	Silica (SiO_2):	19.55
Lithium (Li):	3.00	Calcium Carbonate ($CaCO_3$):	
Boron (B):	3.79	Phosphates (PO_4):	5.70
Silicon (Si):	9.14	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	450.00	2.11	27.39	0.86	5.52	5.40	9.05	4.48	51.20	0.00	0.00	0.00	0.00	0.00	0.00	12.23	5.84
149.00	622.00	2.17	27.42	0.77	5.25	5.34	9.05	4.58	51.20	0.00	0.00	0.00	0.00	0.00	0.00	11.97	5.84
168.00	794.00	2.23	27.45	0.69	5.01	5.31	9.05	4.67	51.20	0.00	0.00	0.00	0.00	0.00	0.00	11.74	5.84
187.00	967.00	2.31	27.48	0.64	4.81	5.29	9.04	4.75	51.20	0.00	0.00	0.00	0.00	0.00	0.00	11.54	5.84
206.00	1139.00	2.39	27.51	0.60	4.65	5.30	9.05	4.83	51.20	0.00	0.00	0.00	0.00	0.00	0.00	11.36	5.84
224.00	1311.00	2.49	27.54	0.58	4.54	5.33	9.05	4.91	51.20	0.00	0.00	0.00	0.00	0.00	0.00	11.20	5.84
243.00	1483.00	2.58	27.56	0.57	4.49	5.36	9.05	4.98	51.20	0.00	0.00	0.00	0.00	0.00	0.00	11.06	5.84
262.00	1656.00	2.68	27.57	0.56	4.48	5.41	9.05	5.04	51.20	0.00	0.00	0.00	0.00	0.00	0.00	10.94	5.84
281.00	1828.00	2.78	27.59	0.57	4.52	5.47	9.05	5.10	51.20	0.00	0.00	0.00	0.00	0.00	0.00	10.82	5.84
300.00	2000.00	2.89	27.60	0.59	4.58	5.54	9.05	5.14	51.20	0.00	0.00	0.00	0.00	0.00	0.00	10.72	5.84

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Vernal, UT 84078

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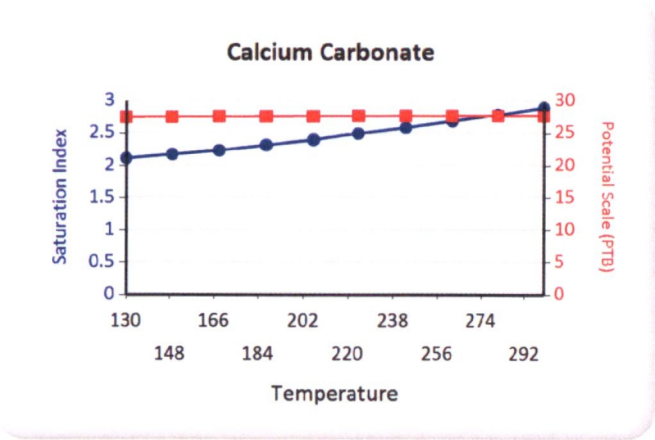
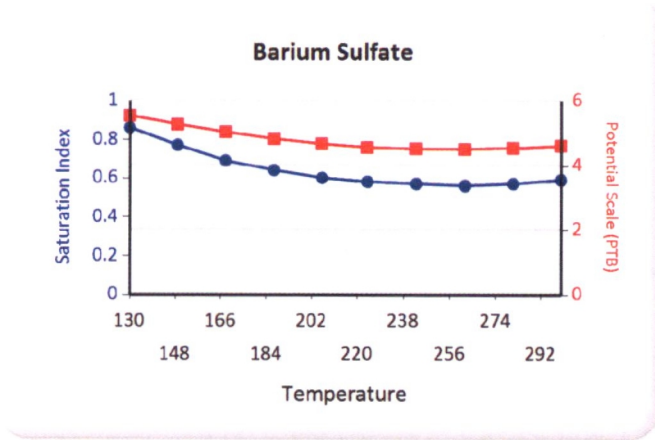
Water Analysis Report

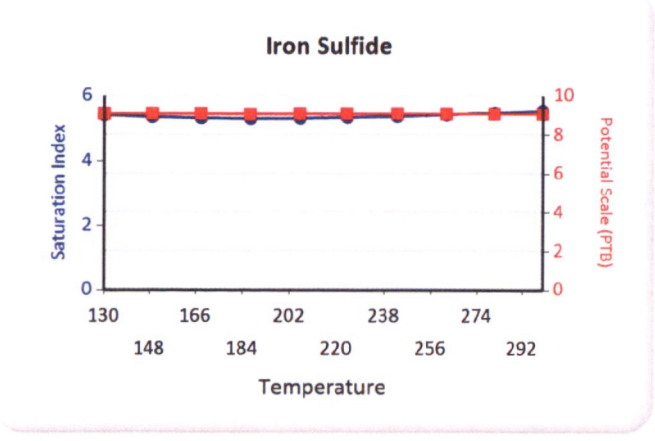
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43	7.51	12.10	0.06	7.20	29.19	4.13	25.92	16.93	45.35
149.00	622.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	7.51	11.66	0.06	7.90	29.30	4.50	26.11	17.35	45.35
168.00	794.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82	7.51	11.27	0.06	8.59	29.36	4.86	26.23	17.78	45.35
187.00	967.00	0.00	0.00	0.00	0.00	0.00	0.00	3.98	7.51	10.92	0.06	9.27	29.39	5.23	26.30	18.22	45.35
206.00	1139.00	0.00	0.00	0.00	0.00	0.00	0.00	4.13	7.51	10.61	0.06	9.93	29.41	5.59	26.34	18.66	45.35
224.00	1311.00	0.00	0.00	0.00	0.00	0.00	0.00	4.27	7.52	10.33	0.06	10.57	29.42	5.94	26.37	19.09	45.35
243.00	1483.00	0.00	0.00	0.00	0.00	0.00	0.00	4.38	7.52	10.07	0.06	11.18	29.42	6.29	26.39	19.52	45.35
262.00	1656.00	0.00	0.00	0.00	0.00	0.00	0.00	4.48	7.52	9.85	0.06	11.77	29.43	6.62	26.40	19.93	45.35
281.00	1828.00	0.00	0.00	0.00	0.00	0.00	0.00	4.56	7.52	9.64	0.06	12.32	29.43	6.93	26.41	20.32	45.35
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	4.63	7.52	9.45	0.06	12.83	29.43	7.23	26.41	20.69	45.35

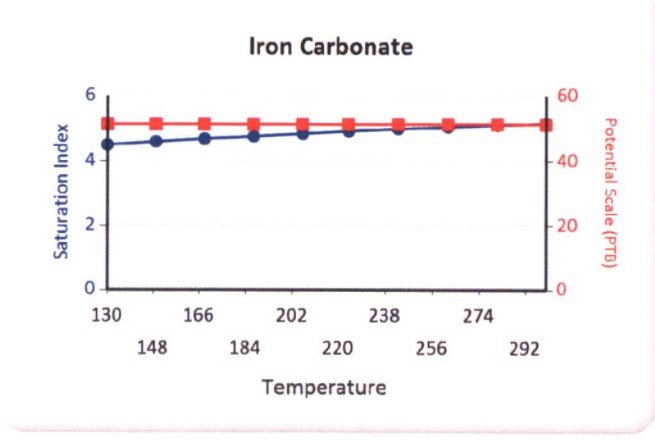
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









Multi-Chem Analytical Laboratory
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Vernal, UT 84078

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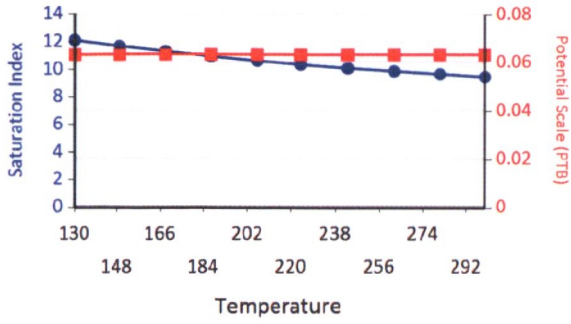
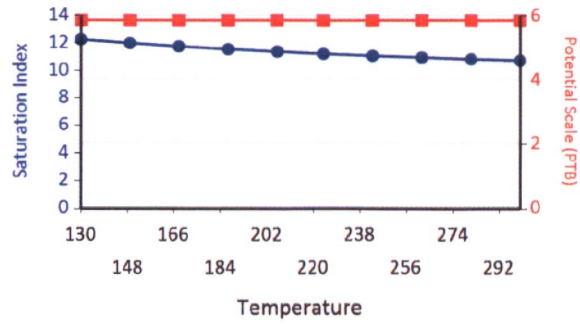
Water Analysis Report

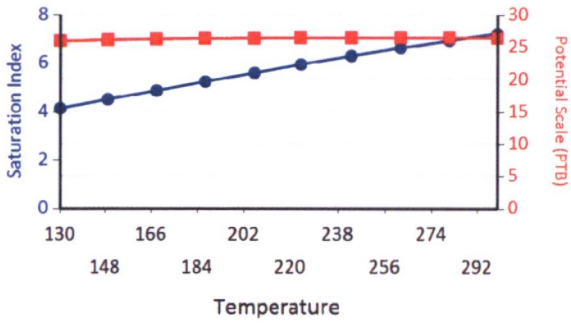
Lead Sulfide



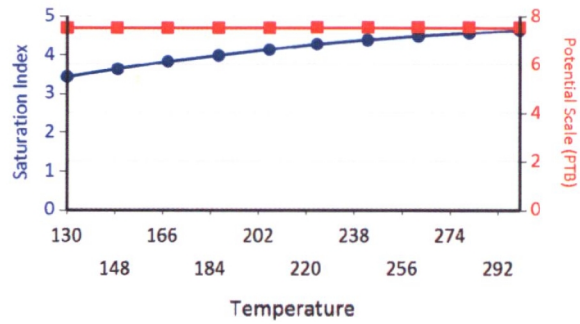
Zinc Sulfide



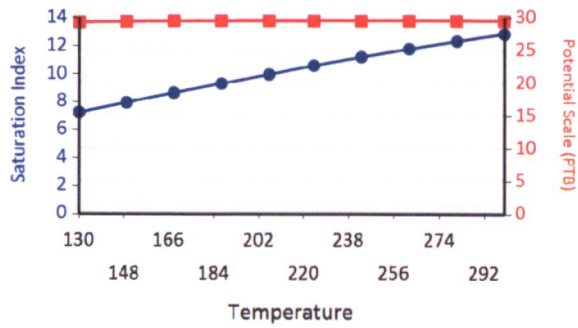
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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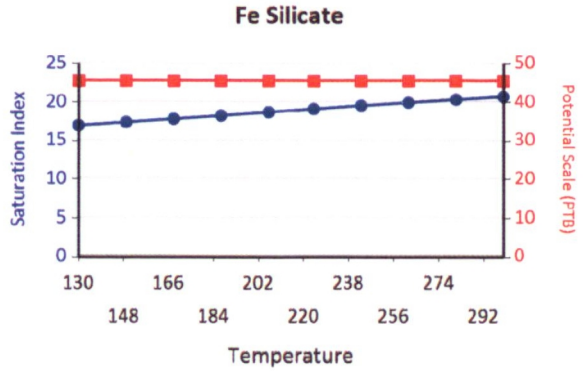


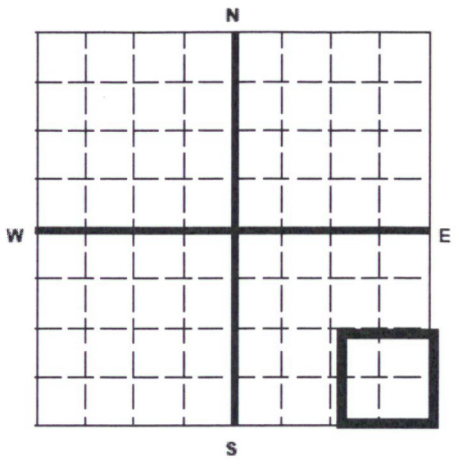
OMB No. 2040-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04434– 04475

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 500 ft. frm (N/S) S Line of quarter section and 500 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 3/3/16
Initial DB

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-16

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1647	1744	204		0	0
February	15	1705	1741	13		0	0
March	15	1603	1728	1		0	0
April	15	1617	1650	126		0	0
May	15	1688	1706	269		0	0
June	15	1714	1735	278		0	0
July	15	1714	1725	261		0	0
August	15	1721	1738	273		0	0
September	15	1657	1740	179		0	0
October	15	1713	1731	171		0	0
November	15	1653	1747	134		0	0
December	15	1711	1762	153		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

EPA Form 7520-11 (Rev. 12-11)

GREEN BLUE CBL
TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 29-16 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327703**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/14/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0055
pH:	8.50
Calculated TDS (mg/L):	11812.01
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	8.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	4030.04	Chloride (Cl):	5000.00
Potassium (K):	43.77	Sulfate (SO_4):	250.00
Magnesium (Mg):	34.51	Bicarbonate (HCO_3):	2318.00
Calcium (Ca):	82.70	Carbonate (CO_3):	
Strontium (Sr):	6.50	Acetic Acid (CH_3COO)	
Barium (Ba):	3.44	Propionic Acid (C_2H_5COO)	
Iron (Fe):	14.52	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	3.69	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.20	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.27	Silica (SiO_2):	24.37
Aluminum (Al):	0.00	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	4.78	Phosphates (PO_4):	90.15
Boron (B):	31.99	Oxygen (O_2):	
Silicon (Si):	11.39		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	2.16	70.59	0.95	1.82	3.81	4.53	3.60	10.55	0.00	0.00	0.00	0.00	0.00	0.00	10.20	1.93
167.00	267.00	2.07	69.97	0.97	1.83	3.80	4.53	3.50	10.55	0.00	0.00	0.00	0.00	0.00	0.00	10.32	1.93
153.00	483.00	2.01	69.44	1.00	1.84	3.80	4.53	3.41	10.55	0.00	0.00	0.00	0.00	0.00	0.00	10.46	1.93
140.00	700.00	1.94	68.84	1.05	1.86	3.82	4.53	3.32	10.55	0.00	0.00	0.00	0.00	0.00	0.00	10.62	1.93
127.00	917.00	1.88	68.18	1.10	1.89	3.85	4.53	3.22	10.55	0.00	0.00	0.00	0.00	0.00	0.00	10.80	1.93
113.00	1133.00	1.83	67.46	1.16	1.91	3.90	4.53	3.13	10.55	0.00	0.00	0.00	0.00	0.00	0.00	10.99	1.93
100.00	1350.00	1.78	66.71	1.24	1.93	3.96	4.53	3.04	10.55	0.00	0.00	0.00	0.00	0.00	0.00	11.20	1.93
87.00	1567.00	1.74	65.94	1.33	1.95	4.03	4.53	2.95	10.54	0.00	0.00	0.00	0.00	0.00	0.00	11.43	1.93
73.00	1783.00	1.70	65.17	1.44	1.97	4.13	4.53	2.86	10.54	0.00	0.00	0.00	0.00	0.00	0.00	11.69	1.93
60.00	2000.00	1.66	64.43	1.57	1.99	4.24	4.53	2.77	10.54	0.00	0.00	0.00	0.00	0.00	0.00	11.96	1.93

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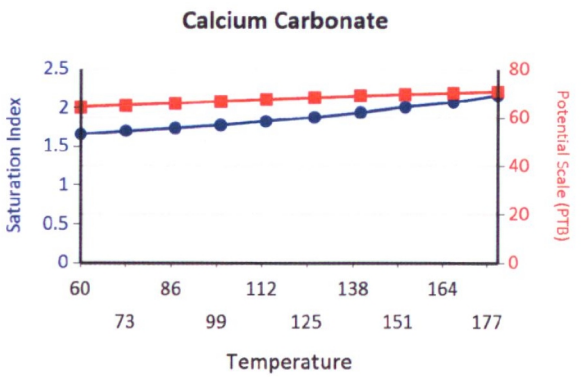
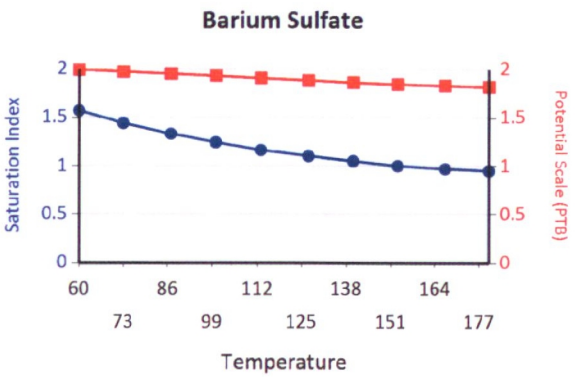
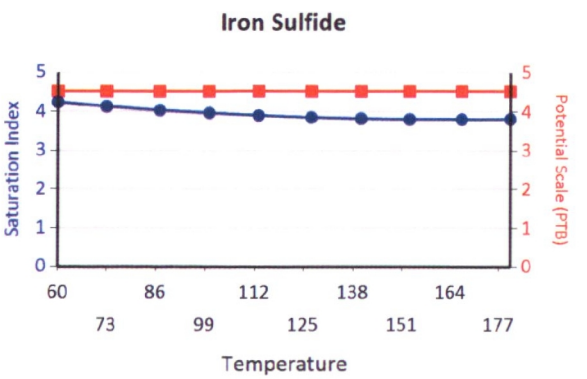
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85	2.48	10.21	0.08	7.21	55.52	4.12	31.02	13.38	11.29
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.70	2.47	10.43	0.08	6.57	51.32	3.75	29.69	12.92	11.29
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	2.47	10.69	0.08	5.99	47.68	3.41	28.29	12.51	11.29
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40	2.47	10.97	0.08	5.40	43.72	3.08	26.56	12.10	11.29
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.47	11.27	0.08	4.80	39.58	2.74	24.55	11.71	11.29
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	2.46	11.60	0.08	4.21	35.33	2.41	22.32	11.32	11.29
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.86	2.45	11.96	0.08	3.61	30.99	2.08	19.92	10.94	11.29
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66	2.43	12.35	0.08	3.00	26.54	1.75	17.36	10.56	11.29
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	2.39	12.78	0.08	2.39	21.90	1.43	14.65	10.19	11.28
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	2.33	13.24	0.08	1.77	16.97	1.10	11.75	9.83	11.28

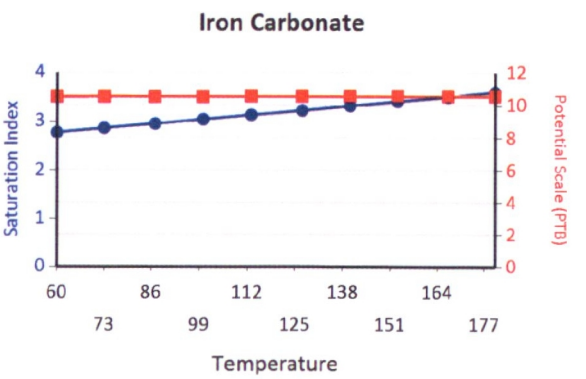
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









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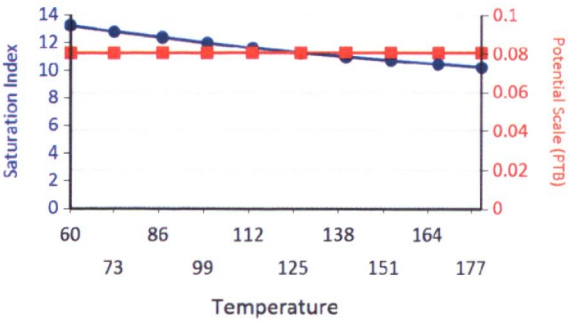
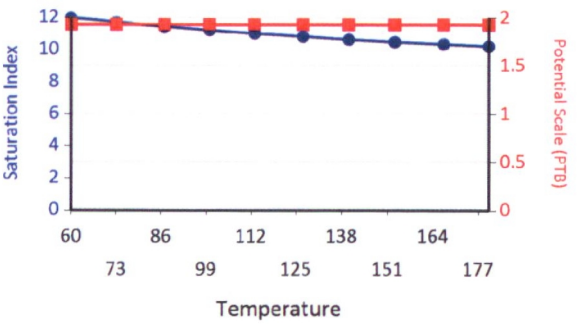
Water Analysis Report

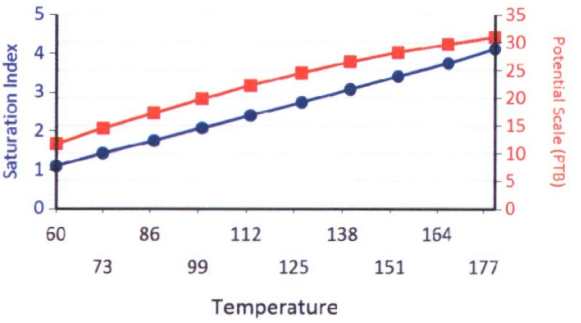
Lead Sulfide



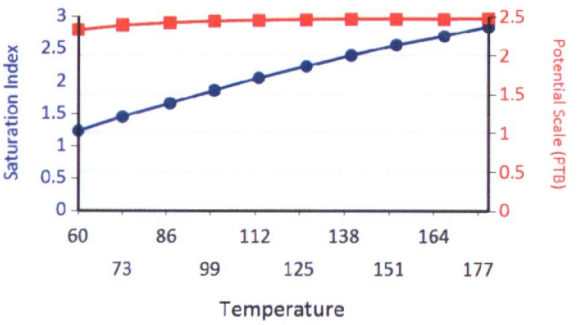
Zinc Sulfide



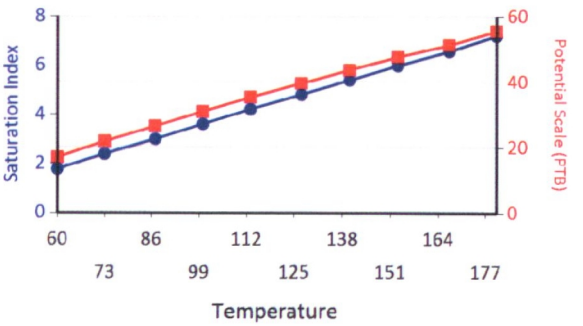
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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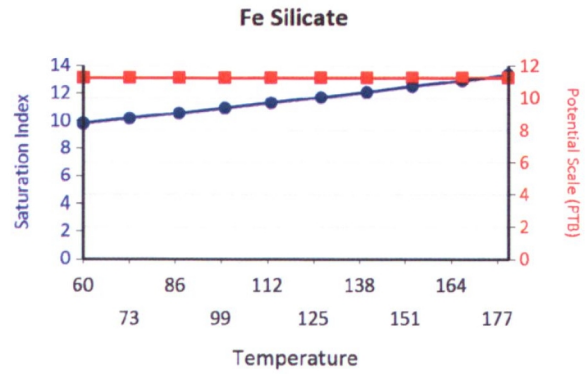


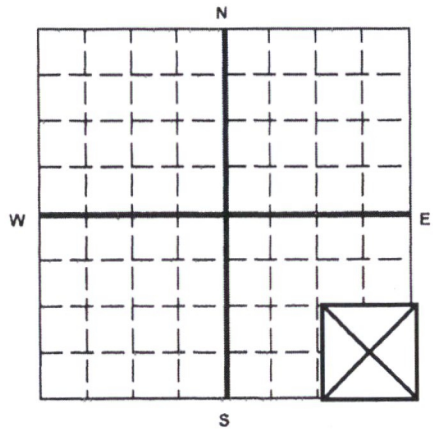
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04475

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 500 ft. frm (N/S) S Line of quarter section and 500 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
☐ Brine Disposal	☐ Individual
☒ Enhanced Recovery	☒ Area
☐ Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-16

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1718	1740	107		0	0
February	14	1697	1719	160		0	0
March	14	1721	1741	368		0	0
April	14	1725	1745	290		0	0
May	14	1733	1745	295		0	0
June	14	1730	1728	261		0	0
July	14	1530	1731	165		0	0
August	14	1728	1716	245		0	0
September	14	1518	1730	123		0	0
October	14	1731	1745	312		0	0
November	14	1733	1760	192		0	0
December	14	1735	1754	132		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/31/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 29-16 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297472**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0034
pH:	8.50
Calculated TDS (mg/L):	9178.41
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	30.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2282.42	Chloride (Cl):	4000.00
Potassium (K):	33.56	Sulfate (SO_4):	609.00
Magnesium (Mg):	33.35	Bicarbonate (HCO_3):	1952.00
Calcium (Ca):	62.46	Carbonate (CO_3):	
Strontium (Sr):	5.33	Acetic Acid (CH_3COO)	
Barium (Ba):	9.38	Propionic Acid (C_2H_5COO)	
Iron (Fe):	159.83	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	7.74	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.01	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.40	Silica (SiO_2):	22.93

Notes:
B=5.19 Al=.1 Li=1.1

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.76	51.67	2.43	5.57	6.00	27.16	4.04	116.11	0.00	0.00	0.00	0.00	0.00	0.00	12.81	4.04
88.00	157.00	1.77	51.51	2.34	5.56	5.92	27.16	4.08	116.11	0.00	0.00	0.00	0.00	0.00	0.00	12.63	4.04
97.00	300.00	1.78	51.64	2.26	5.56	5.86	27.16	4.12	116.12	0.00	0.00	0.00	0.00	0.00	0.00	12.46	4.04
106.00	443.00	1.80	51.79	2.19	5.55	5.80	27.16	4.16	116.14	0.00	0.00	0.00	0.00	0.00	0.00	12.31	4.04
115.00	585.00	1.81	51.94	2.13	5.54	5.76	27.16	4.20	116.15	0.00	0.00	0.00	0.00	0.00	0.00	12.16	4.04
124.00	728.00	1.83	52.10	2.07	5.54	5.72	27.16	4.24	116.16	0.00	0.00	0.00	0.00	0.00	0.00	12.02	4.04
133.00	871.00	1.85	52.26	2.01	5.53	5.69	27.16	4.29	116.17	0.00	0.00	0.00	0.00	0.00	0.00	11.89	4.04
142.00	1014.00	1.88	52.42	1.97	5.53	5.66	27.16	4.33	116.17	0.00	0.00	0.00	0.00	0.00	0.00	11.77	4.04
151.00	1157.00	1.90	52.58	1.92	5.52	5.64	27.16	4.36	116.18	0.00	0.00	0.00	0.00	0.00	0.00	11.66	4.04
160.00	1300.00	1.93	52.74	1.88	5.51	5.63	27.16	4.40	116.19	0.00	0.00	0.00	0.00	0.00	0.00	11.56	4.04

		Hemihydrate $CaSO_4 \sim 0.5H_2O$		Anhydrate $CaSO_4$		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	5.15	12.20	0.00	2.56	18.37	1.21	8.39	13.28	24.86
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	5.16	11.90	0.00	2.86	19.56	1.36	9.00	13.41	24.86
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	5.17	11.63	0.00	3.22	21.22	1.54	9.82	13.61	24.86
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	5.18	11.37	0.00	3.59	22.70	1.74	10.57	13.81	24.86
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	2.46	5.18	11.13	0.00	3.96	23.99	1.93	11.24	14.03	24.86
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57	5.19	10.90	0.00	4.33	25.07	2.14	11.84	14.26	24.86
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.67	5.19	10.68	0.00	4.71	25.92	2.34	12.35	14.49	24.86
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.76	5.19	10.48	0.00	5.09	26.55	2.55	12.79	14.73	24.86
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85	5.20	10.29	0.00	5.47	27.00	2.76	13.15	14.97	24.86
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.94	5.20	10.11	0.00	5.86	27.30	2.97	13.44	15.22	24.86

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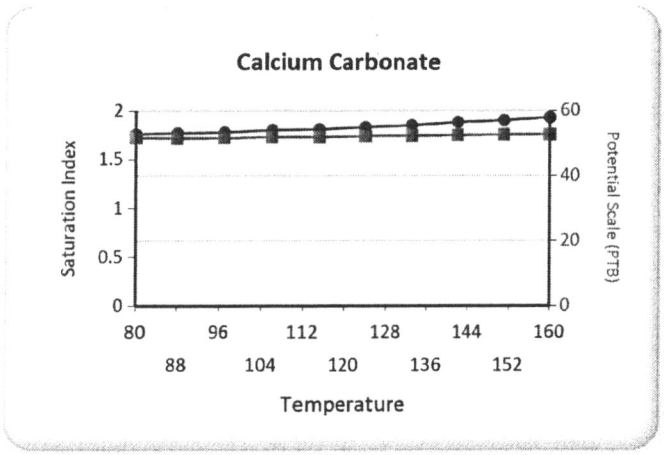
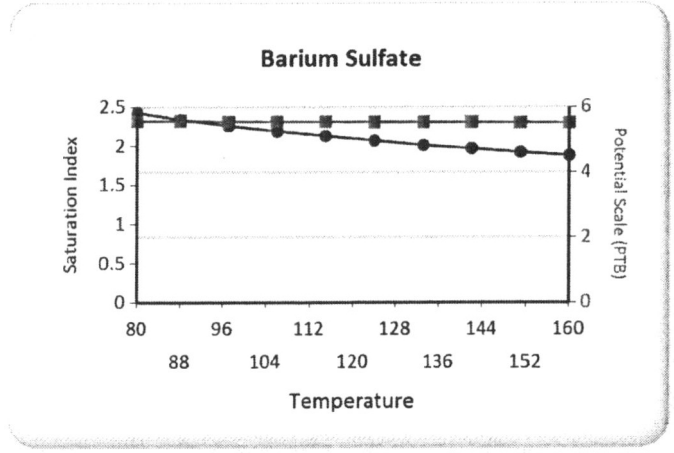
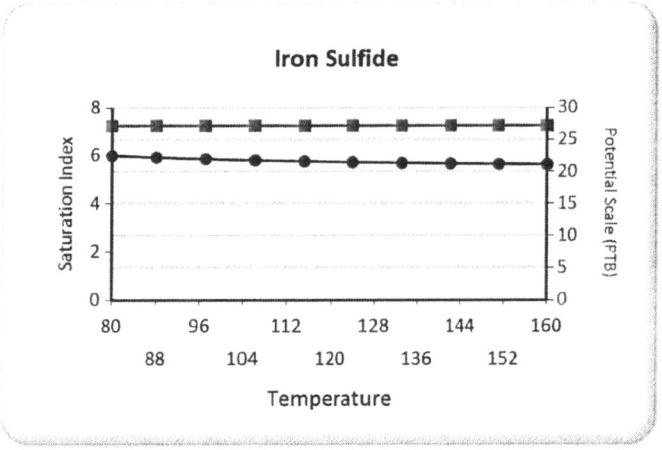
Water Analysis Report

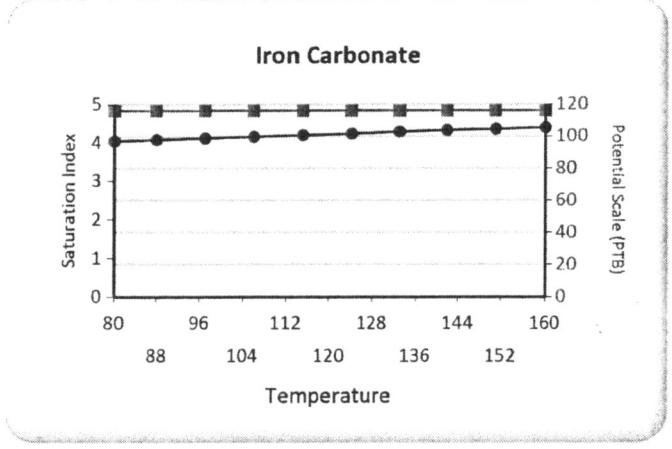
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

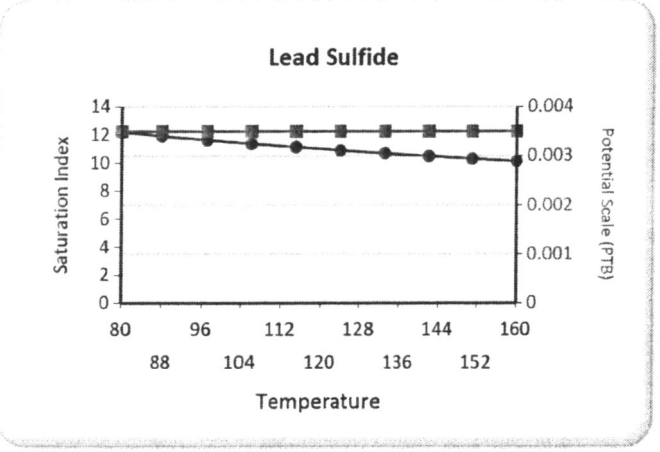
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

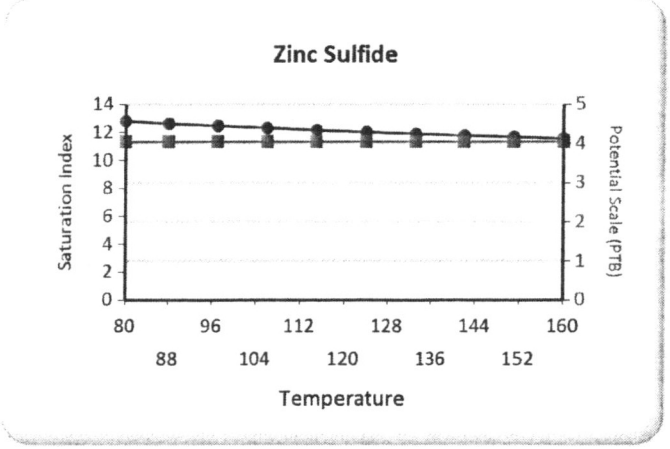












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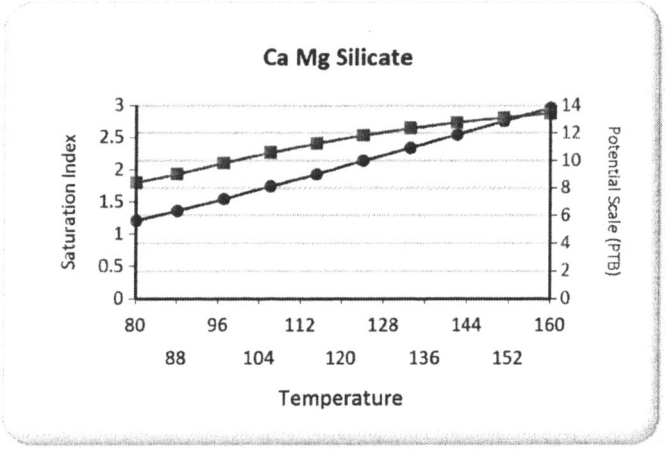
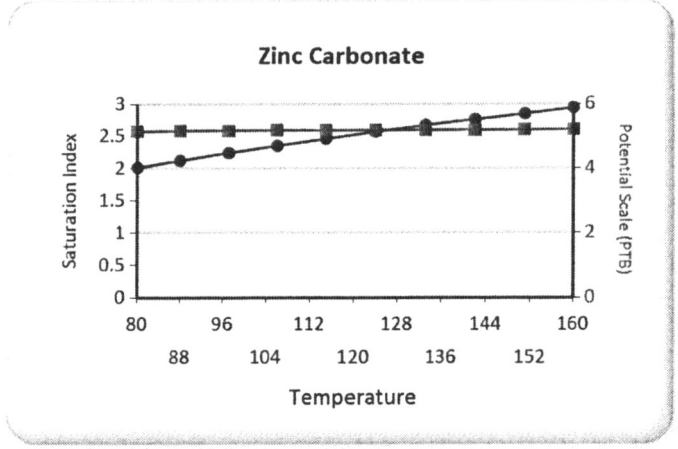
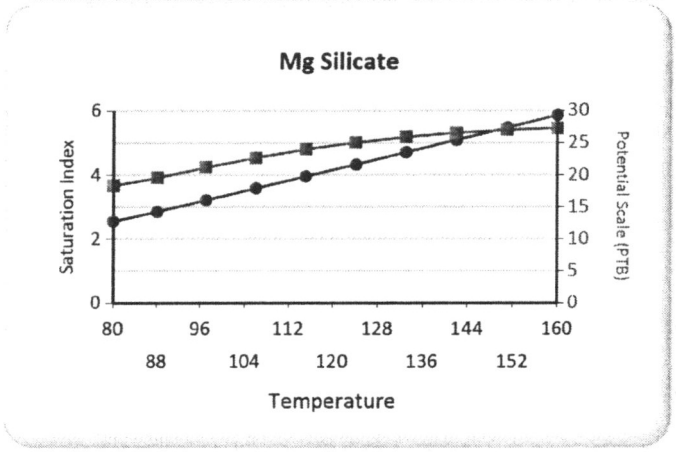
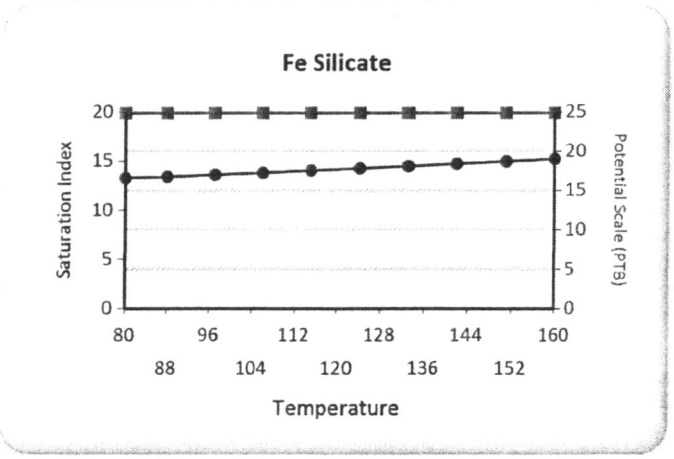








September 14, 2015

Gary Wang
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: EPA AREA PERMIT NO. UT2736-04475
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 29-16

Mr. Breffle:
The enclose Mechanical Integrity Test was performed on the above referenced well on September 10, 2015. This MIT was performed because the well was due for the regular five year Mechanical Integrity Test.

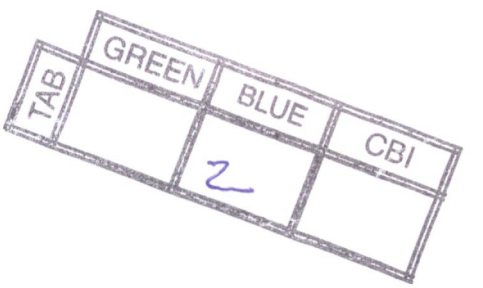
If you need any more information please call at (435) 722-5302.

Sincerely,
Petroglyph Operating Co., Inc.

Rodrigo Jurado
Regulatory Compliance Specialist

Encl: MIT for the Ute Tribal 29-16

U2 Entered
Date 10/6/15
Initial JJ



Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 9 / 10 / 15

Test conducted by: CHAD STEVENSON

Others present: _____

Well Name: 29-16 Type: ER SWD **Status:** AC TA UC

Field: ANTELOPE CREEK

Location: 29-16 Sec: ____ T ____ N / S R ____ E / W County: DUCHESNE State: UT

Operator: PETROGLYPH ENERGY

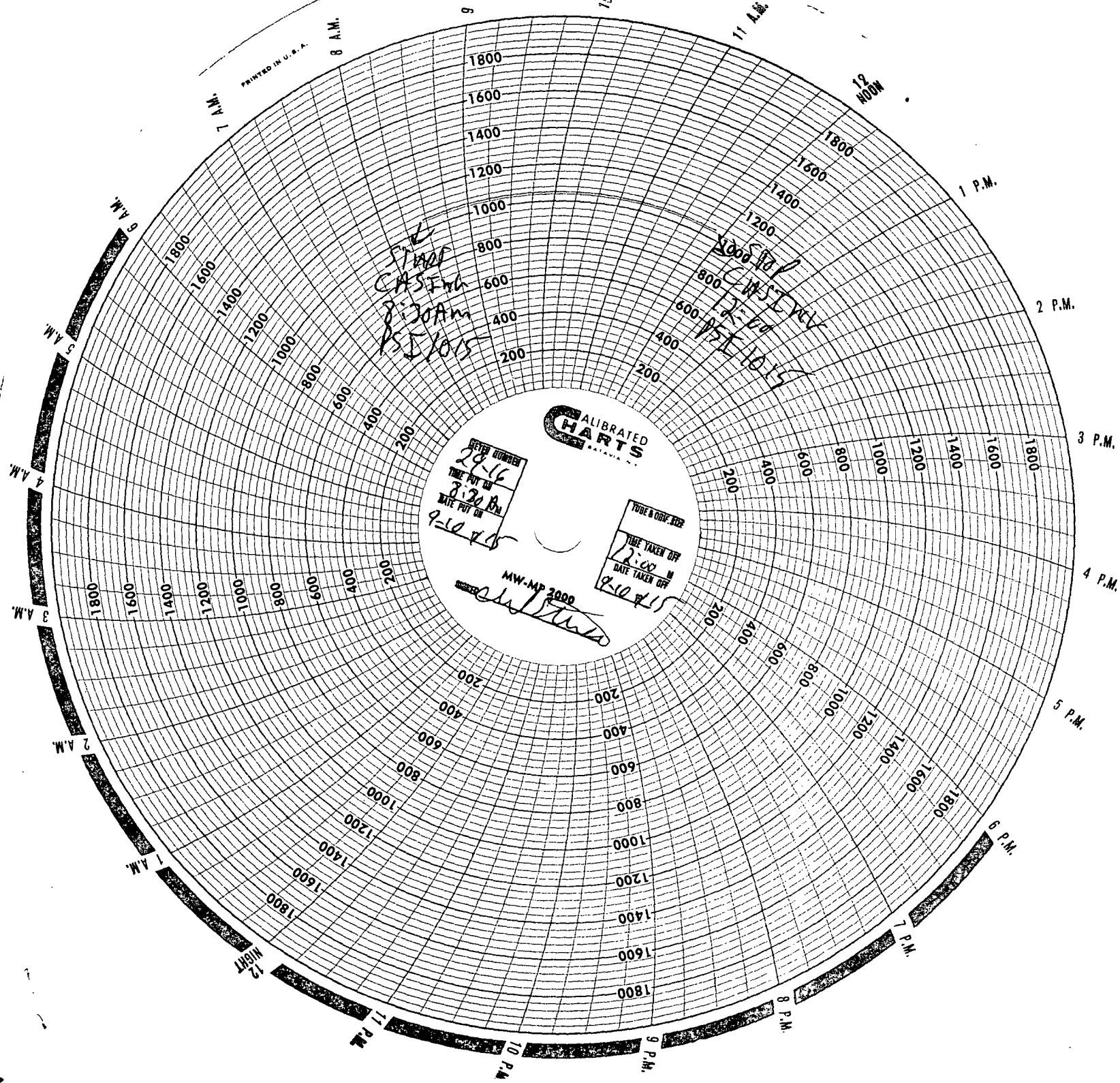
Last MIT: ____ / ____ / ____ **Maximum Allowable Pressure:** _____ **PSIG**

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 9 **bpd**
Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		**PRESSURE RECORD**	
Initial Pressure	1737 psig	psig	psig
End of test pressure	1737 psig	psig	psig
CASING / TUBING ANNULUS		**PRESSURE RECORD**	
0 minutes	1015 psig	psig	psig
5 minutes	1015 psig	psig	psig
10 minutes	1015 psig	psig	psig
15 minutes	1015 psig	psig	psig
20 minutes	1015 psig	psig	psig
25 minutes	1015 psig	psig	psig
30 minutes	1015 psig	psig	psig
3 ½ Hours ~~minutes~~	1015 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? **If Yes,** _____ **psig.**


CALIBRATED CHARTS
METER NUMBER
28-16
TIME PUT ON
8:20 AM
DATE PUT ON
9-10-15
TUBE & ORIF. SIZE
TIME TAKEN OFF
2:00 PM
DATE TAKEN OFF
9-10-15
MW-MP 2000
8 A.M.
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.

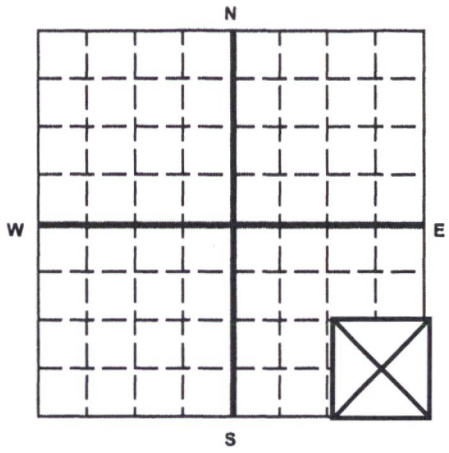
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04475

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of SE 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 500 ft. frm (N/S) S Line of quarter section and 500 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-16

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1710	1735	159		0	0
February	13	1725	1748	252		0	0
March	13	1699	1723	166		0	0
April	13	1732	1738	460		0	0
May	13	1732	1747	247		0	0
June	13	1704	1710	85		0	0
July	13	1685	1692	241		0	0
August	13	1683	1704	227		0	0
September	13	1693	1733	213		0	0
October	13	1712	1734	350		0	0
November	13	1722	1732	425		0	0
December	13	1718	1725	267		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/21/14
Initial JB

GREEN | BLUE | CBI
TAB | 2 |

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 29-16 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262998**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.000
pH:	8.10
Calculated TDS (mg/L):	4600.14
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	3.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1209.40	Chloride (Cl):	1000.00
Potassium (K):	1.70	Sulfate (SO_4):	214.00
Magnesium (Mg):	63.00	Bicarbonate (HCO_3):	1952.00
Calcium (Ca):	133.00	Carbonate (CO_3):	
Strontium (Sr):	3.50	Acetic Acid (CH_3COO)	
Barium (Ba):	0.16	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.40	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.26	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.01	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.17	Silica (SiO_2):	20.54

Notes:
B=.5 Al=0 Li=.03

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	1.75	98.54	0.65	0.07	3.08	1.32	1.87	1.72	0.00	0.00	0.00	0.00	0.00	0.00	10.45	0.14
73.00	157.00	1.75	97.71	0.51	0.07	2.93	1.32	1.92	1.72	0.00	0.00	0.00	0.00	0.00	0.00	10.13	0.14
86.00	300.00	1.79	99.34	0.38	0.06	2.84	1.32	2.01	1.73	0.00	0.00	0.00	0.00	0.00	0.00	9.88	0.14
100.00	443.00	1.83	101.04	0.27	0.04	2.77	1.32	2.10	1.73	0.00	0.00	0.00	0.00	0.00	0.00	9.65	0.14
113.00	585.00	1.87	102.78	0.17	0.03	2.72	1.32	2.18	1.74	0.00	0.00	0.00	0.00	0.00	0.00	9.45	0.14
126.00	728.00	1.92	104.48	0.09	0.02	2.68	1.32	2.27	1.74	0.00	0.00	0.00	0.00	0.00	0.00	9.27	0.14
140.00	871.00	1.98	106.11	0.02	0.00	2.67	1.32	2.36	1.74	0.00	0.00	0.00	0.00	0.00	0.00	9.11	0.14
153.00	1014.00	2.04	107.64	0.00	0.00	2.66	1.32	2.44	1.74	0.00	0.00	0.00	0.00	0.00	0.00	8.96	0.14
166.00	1157.00	2.10	109.04	0.00	0.00	2.67	1.32	2.53	1.74	0.00	0.00	0.00	0.00	0.00	0.00	8.83	0.14
180.00	1300.00	2.17	110.29	0.00	0.00	2.69	1.32	2.61	1.74	0.00	0.00	0.00	0.00	0.00	0.00	8.72	0.14

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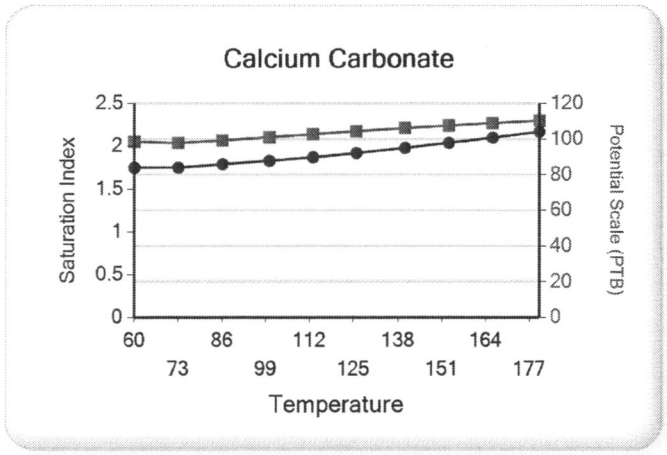
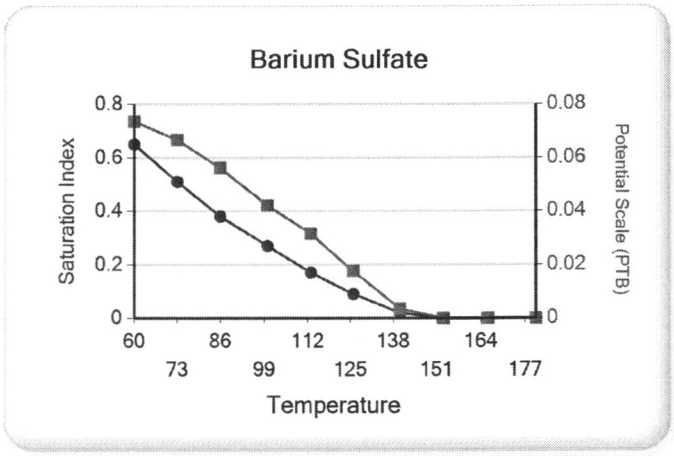
Water Analysis Report

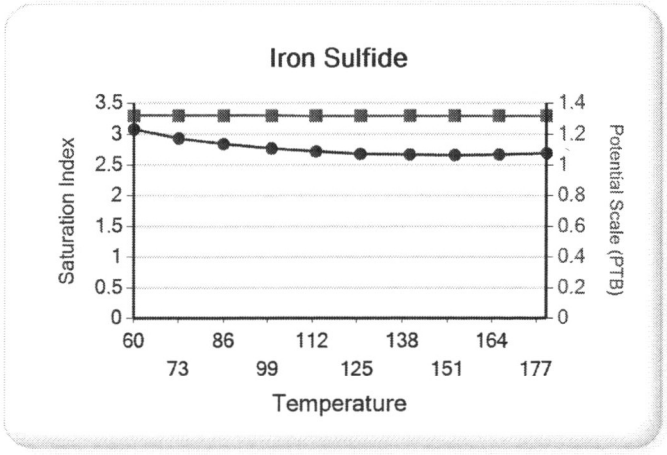
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.57	0.00	0.03	0.33	0.00	0.00	5.12	1.82
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05	11.08	0.00	0.43	2.68	0.00	0.00	5.26	1.83
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.09	10.65	0.00	1.06	6.47	0.21	1.36	5.63	1.84
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.13	10.27	0.00	1.71	10.45	0.57	3.36	6.04	1.84
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.14	9.92	0.00	2.38	14.42	0.94	5.35	6.48	1.85
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.15	9.60	0.00	3.06	18.06	1.32	7.20	6.94	1.85
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	0.16	9.31	0.00	3.74	20.98	1.71	8.82	7.42	1.86
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.16	9.04	0.00	4.43	22.93	2.11	10.13	7.91	1.86
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	0.17	8.80	0.00	5.13	24.01	2.51	11.11	8.41	1.86
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.17	8.58	0.00	5.81	24.52	2.91	11.80	8.92	1.86

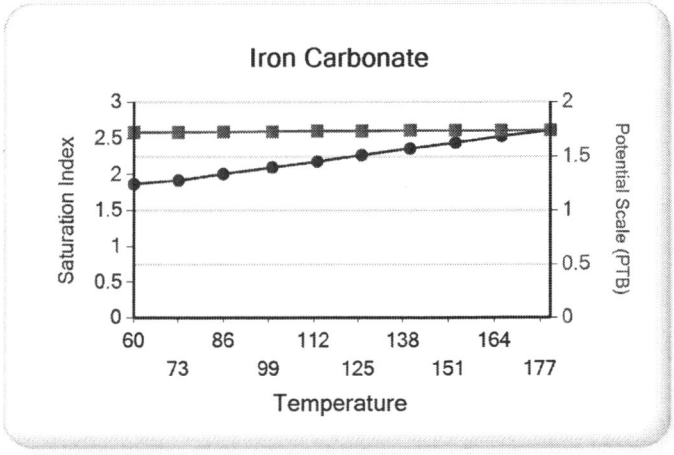
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









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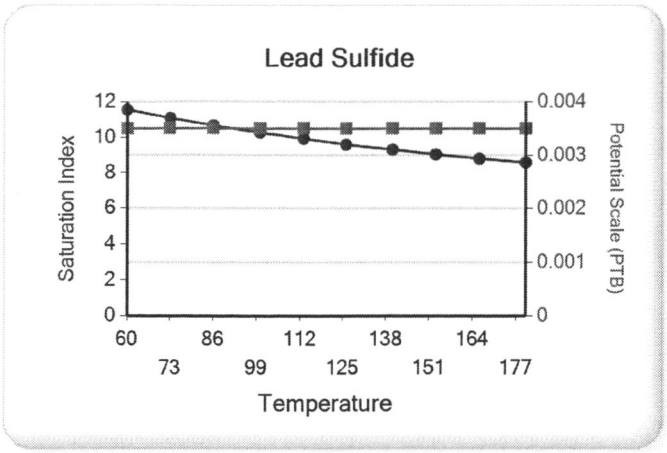
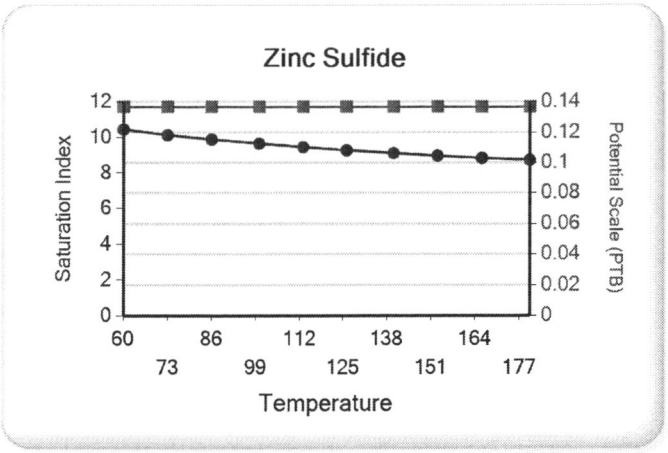
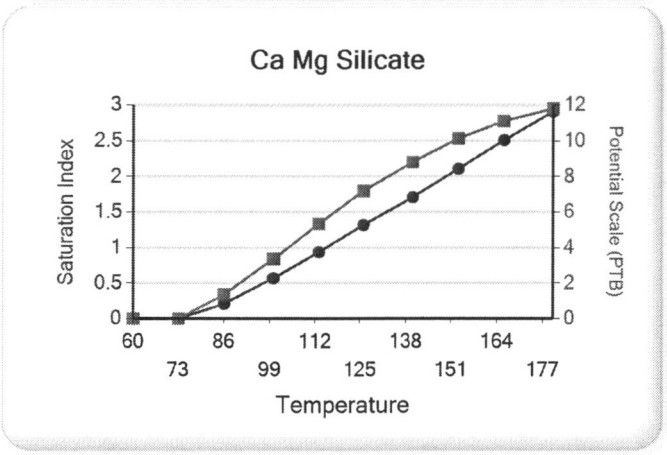
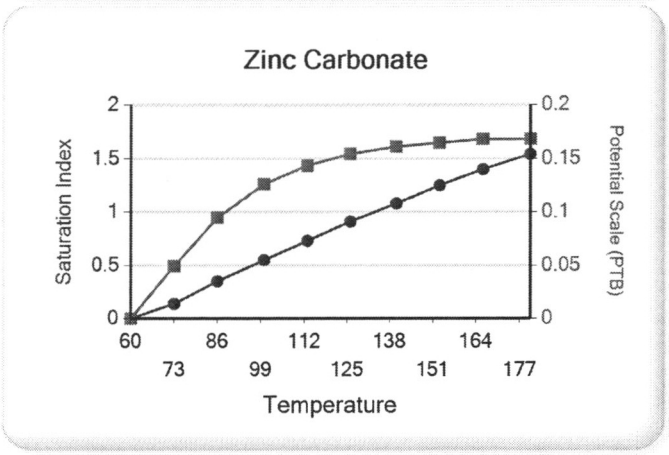
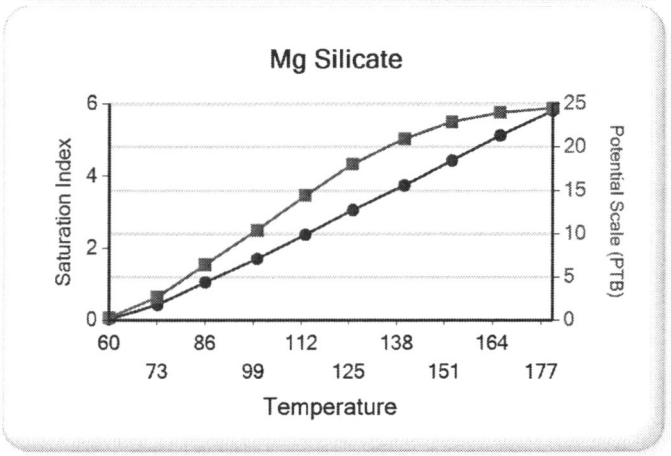
Water Analysis Report











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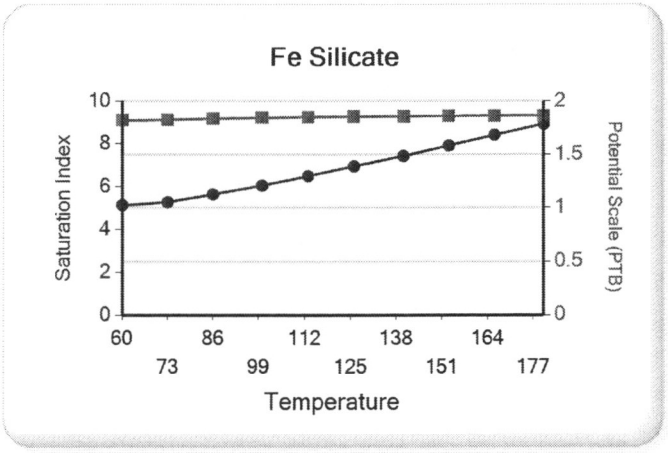
Water Analysis Report



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

AUG 24 1998

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, Kansas 67504-1839

RE: **UIC PERMIT MODIFICATION**
Conversion of Additional Well to
Antelope Creek Waterflood
EPA Area Permit UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Your letter of July 17, 1998, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000 is hereby granted.

NAME	LOCATION	EPA WELL PERMIT NO.
Ute Tribal #29-16	*T 5 S - R 3 W* *Duchesne County, UT*	*#UT2736-04475*

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Permit Modification, conversion is being made under the provisions of 40 CFR 144.33 and the terms and conditions of the original permit. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

(1) The **conversion** of this production well has been reviewed, and with modifications found satisfactory, therefore, no corrective action is required.

(2) **Maximum injection pressure (Pmax)** - the permittee shall limit the maximum surface injection pressure (Pmax) to **2217 psig. Permit provision have been made that allow the operator to request an increase or decrease in the injection pressure.**

The calculations for the fracture gradient was estimated from instantaneous shut-in pressures (ISIP's) observed during fracturing treatments performed on two (2) individually fraced zones within the Ute Tribal #29-16 well which established an average fracture gradient (Fg) of 0.913 psi/ft. This Fg is acceptable to the Environmental Protection Agency (EPA) and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

Pmax = [Fg - 0.433 (Sg)] d

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4619' shallowest perforations after conversion

Sg = Specific gravity of injected water

Pmax = [0.913 - .433 (1.00)] 4619

Pmax = 2217 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.913 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 2217 psig.**

(3) The **plugging and abandonment plan and schematic**, submitted by your office, has been reviewed, and approved.

(4) As no cement bond log (CBL) is available to determine the effectiveness of annulus cement above the top perforations, the permittee shall run a CBL from plug back total depth (5806 feet) to 200 feet above top perforations (4619 feet). The CBL is an approved tool delineating confinement of the injectate to the permitted formation; see enclosure for CBL logging techniques and interpretation.

Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received **separate written authorization to inject by the Environmental Protection Agency**. In summary, these requirements for your newly permitted injection well are:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12)**.

(2) The **pore pressure has been determined.**

(3) The well has successfully completed and passed a **mechanical integrity test, with pressure chart**; EPA form enclosed; and

(4) Submitted a **CBL** with brief narrative identifying top of cement, for approval to insure adequate bonding.

All other provisions and conditions of the permit remain as originally issued July 12, 1994.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P-W-GW**. Thank you for your continued cooperation.

Sincerely,

Kerrigan G. Clough
Assistant Regional Administrator
Office of Partnerships and
Regulatory Assistance

Enclosure: EPA MIT Form
Guidance; Cement Bond Logging Techniques and Interpretation

cc: Mr. Ronald Wopsock, Chairman
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466

JAN 22 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

73 Authorization to Inject Limited

Re: LIMITED AUTHORIZATION TO INJECT
Ute Tribal #29-16 (UT04475)
Antelope Creek Field
EPA AREA PERMIT UT2736-00000
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting information pertaining to Ute Tribal #29-16 to the Environmental Protection Agency (EPA) Region VIII Groundwater Program. Requirements of UIC Area Permit UT2736-00000 Part II Sections (C)(2) "Prior To Commencing Injection" required submittal of the following information:

(1) **Well Rework Record (*EPA Form 7520-12*) with after conversion well schematic;** and

(2) the well has successfully completed and passed a Mechanical Integrity Test (MIT), with pressure chart demonstrating **Part I (internal) mechanical integrity;** and

(3) **pore pressure survey has been determined** of the injection zones.

The conversion plan for the Ute Tribal #29-16 has been reviewed, and found satisfactory. EPA analysis of the cement bond log (CBL), (please refer to the enclosed GROUND WATER SECTION GUIDANCE NO. 34, Cement bond logging techniques and interpretation) for this well **could not**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE
DENVER, CO 80202-246

Scan under
UT20736-04475
Authorization to
Inject-Initial 1/22/2001

JAN 22 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

43 Authorization to Inject Letters

Re: LIMITED AUTHORIZATION TO INJECT
Ute Tribal #29-16 (UT04475)
Antelope Creek Field
EPA AREA PERMIT UT2736-00000
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting information pertaining to Ute Tribal #29-16 to the Environmental Protection Agency (EPA) Region VIII Groundwater Program. Requirements of UIC Area Permit UT2736-00000 Part II Sections (C)(2) "Prior To Commencing Injection" required submittal of the following information:

(1) **Well Rework Record (*EPA Form 7520-12*) with after conversion well schematic;** and

(2) the well has successfully completed and passed a Mechanical Integrity Test (MIT), with pressure chart demonstrating **Part I (internal) mechanical integrity;** and

(3) **pore pressure survey has been determined** of the injection zones.

The conversion plan for the Ute Tribal #29-16 has been reviewed, and found satisfactory. EPA analysis of the cement bond log (CBL), (please refer to the enclosed GROUND WATER SECTION GUIDANCE NO. 34, Cement bond logging techniques and interpretation) for this well **could not**

determine that the annulus cement would provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the wellbore; Part II MI, 40 CFR § 146.8 (a) (2). This CBL, run November 13,1985, needed the following: an amplitude scale, amplified amplitude, and needed calibration. Because the CBL submitted for his well also did not show an adequate interval of 80% or greater bond index through the confining zone above the Garden Gulch Member, the operator is required to demonstrate Part II (External) Mechanical Integrity(MI II). The demonstration shall be by temperature survey or other approved test. Other approved tests for demonstrating Part II MI include a noise log or oxygen activation log, and Region 8 may also accept results of a radioactive tracer (RATS) survey under certain circumstances.

EPA is hereby authorizing injection into the Ute Tribal #29-16 for a limited period of **up to one hundred eighty (180) calendar days**, effective upon receipt of this letter, herein referred to as the **'limited authorized period'**. The authorized period allows injection for the purpose of stabilizing the injection formation pressure prior to demonstrating Part II MI, which is necessary because the tests rely on stable formation pressure. Results of the tests shall be submitted to, and written approval with authority to re-commence injection received from EPA prior to resuming injection following the limited authorized period. A copy of Region 8 guideline for conducting a temperature survey is enclosed with this letter.

The Director has determined that the **maximum surface injection pressure for the Ute Tribal #29-16 shall not exceed 2217 psig.** (August 24, 1998) or until such time that a step-rate injectivity test (SRT) has been performed and approved by the EPA.

If you have questions in regard to the above action, please contact Chuck Tinsley at 303.312.6266 or Dan Jackson at 303.312.6155. Results from temperature log or other Part II MI test should be mailed to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

Enclosure: Current MIT Guidance No. 37
Current Guidance No. 34, Cement Bond Logging Technique and Interpretation
Region 8 guideline for conducting a temperature survey

cc: Mr. Ronald McCook, Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Mr. Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office

UTE TRIBAL #29-16 (UT2736-04475)

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery *(Extra charge)*

1/22/01 CW 3918C

3. Article Addressed to:
JAN 22 2001
Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Co., Inc.
P.O. Box 607
Roosevelt, UT 84066

4. Article Number
Z 159 952 283

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☐ Express Mail ☐ Return Receipt for Merchandise

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X Micheal Safford

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ROOSEVELT UT 84066 JAN 29 2001 USPS

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PS Form 3811, Mar. 1988 * U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

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Sent to	Mr. Micheal Safford
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	P.O. BOX 607
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PS Form 3800, April 1995

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

SEP 20 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

220 authorization & Injection Final

RE: **Authorization to Continue Injection**
Ute Tribal #29-16
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04475
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting to the Region VIII Ground Water Program office of the Environmental Protection Agency (EPA) the results from the June 21, 2001, radioactive tracer survey (RATS) used to demonstrate Part II (External) Mechanical Integrity (MI) test on the Ute Tribal #29-16 injection well. In the letter accompanying the RATS results, you requested an extension on the time allowed to inject in order to allow for continued stabilization of pressure, and indicated your willingness to run RATS at set intervals until a maximum injection pressure of 2217 psig could be obtained, tested and approved. A limited injection period of up to one hundred and eighty days, beginning January 24, 2001, was authorized to allow for stabilization of the injection formation pressure prior to the demonstration of Part II (External) MI.

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the **tested pressure of 1780 psi.** Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #29-16 under the terms and conditions of EPA Area Permit UT2736-00000 and the

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-24
http://www.epa.gov/regio

Scan under
UT20736 - 04475
Authorization to
Inject - Final 9/20/2001

SEP 20 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

220 authorizat

RE: **Authorization to Continue Injection**
Ute Tribal #29-16
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04475
Duchesne County, Utah

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The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, at the **tested pressure of 1780 psi.** Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #29-16 under the terms and conditions of EPA Area Permit UT2736-00000 and the

Authorization currently for Additional Well UT2736-04475, issued under this Area Permit. The authorized maximum allowable injection pressure (MAIP) for this well is changed to 1780 psig.

Please note that the maximum pressure of 1780 psi used during the RATS MI demonstration becomes the maximum allowable injection pressure for the well. However, you may apply for a higher maximum allowable injection pressure at a later date after the formation pressure has further stabilized. Your application should be accompanied by the interpreted results from a step rate test that measure the formation fracture pressure and fracture gradient at this location. A copy of EPA guidelines for running and interpreting a step rate test are included with this letter. Should the step rate test result in approval of a higher MAIP, a new Part II (External) MI demonstration must be run to show that injected fluids will remain in the authorized injection interval at the higher pressure.

If you have any questions in regard to the above action, please contact Chuck Tinsley at 303.312.6266 or Dan Jackson at 303.312.6155. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Council
Ute Indian Tribe

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, 8ENF-T
USEPA

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: 9/20/01 CW 4181C

Mr. Micheal Safford
Operation Coordinator
Petroglyph Operating Co., Inc.
P.O. Box 607
Roosevelt, UT 84066

SEP 20 2001

(UT2736-04475)
UTE TRIBAL #29-16

COMPLETE THIS SECTION ON DELIVERY

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C. Signature
X [signature] ☐ Agent ☒ Addressee

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If YES, enter delivery address below: ☐ No

(recd 26)
OCT 1 2001

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☐ Insured Mail ☐ C.O.D.

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PS Form 3811, July 1999 Domestic Return Receipt 102595-00-M-0952

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Sent To Mr. Micheal Safford
Operation Coordinator
Street, Apt. No., or PO Box No. Petroglyph Operating Co., Inc.
P.O. Box 607
City, State, ZIP+4 Roosevelt, UT 84066

PS Form 3800, January 2001 See Reverse for Instructions

7001 0320 0005 9387 2045